

Sheshan VLBI Station Report for 2010

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Abstract

This report summarizes the observing activities at the Sheshan station (SESHAN25) in 2010. The SESHAN25 radio telescope participated in sixteen 24-hour VLBI sessions organized by the IVS and two VLBI sessions organized by the EVN, as well as in a number of e-VLBI sessions and formatter tests by the EVN. In October and November 2010, SESHAN25 was involved in the VLBI tracking of the Chinese Chang'E-2 Lunar satellite. We also report on updates and development of the facilities at the station.

1. General Information

The Sheshan VLBI station (also named SESHAN25 in the geodetic community) is located at Sheshan, about 30 km west of Shanghai. A 25-meter radio telescope is in operation at 1.3, 3.6/13, 5, 6, and 18-cm wavelengths. The Sheshan VLBI station is a member of the IVS and EVN. The SESHAN25 telescope takes part in international VLBI experiments for astrometric, geodetic, and astrophysical research. Apart from its international VLBI activities, the telescope spent a large amount of time on the Chinese Lunar Project, including the testing before the launch of the Chang'E-2 satellite and the tracking campaign after the launch of Chang'E-2.

2. VLBI Observations in 2010

In 2010, SESHAN25 participated in 16 IVS sessions. SESHAN25 also participated in the EVN sessions in February and June. There were no known problems during the observations. A new 6.7-GHz receiver with dual-circular polarization has been available since spring 2010. We found fringes in the EVN February session. Soon it witnessed the first methanol spectral lines from a massive star-forming region observed with the new receiver. Methanol maser line studies were started both in single-dish and in VLBI modes after that. In order to participate in the Chinese Chang'E-2 Lunar Project, SESHAN25 prepared for Chang'E-2 tracking in mid-September, and it did real-time VLBI tracking after its launch on 1st October. Since December 2010, SESHAN25 has observed the Chang'E-2 satellite with a long term routine VLBI tracking model for two or three days per week.

3. Development and Maintenance of Sheshan Telescope in 2010

We have upgraded the Mark 5A Firmware Version to 12.06 (API 10.07, SDK 8.2), in order to use SATA modules. We also performed routine maintenance of our antenna in the middle of 2010.

4. The Staff of the Sheshan VLBI Station

Table 1 lists the group members of the Sheshan VLBI Station. The staff are involved in the VLBI program at the station with various responsibilities.

Table 1. The staff of the Sheshan VLBI Station.

Name	Background	Position and Duty	Contact
Xiaoyu HONG	Astrophysics	Director, Astrophysics	xhong@shao.ac.cn
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Bo XIA	Electronics	VLBI friend, VLBI terminal	bxia@shao.ac.cn
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5. Outlook

In 2011 the Sheshan radio telescope will take part in 23 IVS sessions and three EVN sessions. The telescope will regularly monitor the Chang'E-2 satellite in its lunar orbit for 2–3 days per week in 2011.

A new telescope with a diameter of 65-m will be built about 6 km west of the current site of the Sheshan 25-m radio telescope. It is planned to be available for C, L, and S/X bands in 2012.